State of the Lakes Ecosystem Conference (SOLEC), Indicators, and the MMP

The State of the Lakes Ecosystem Conference (SOLEC)[I] was established in 1992 by the governments of Canada and the United States (see SOLEC box earlier in this report). Over the years, the context for reporting at these conferences has evolved from "big picture" basin-wide conditions reported in 1994 through to status and trends reported at SOLEC 1996. The focus of SOLEC 1998 – indicators of Great Lakes ecosystem health – provided an excellent opportunity to demonstrate the utility and efficiency of the MMP. Coastal wetlands were one of the four core ecosystem components for which indicators were proposed, along with the nearshore terrestrial environment, open waters and nearshore waters. The recommended suite of 13 basin-wide indicators of coastal wetland health includes:

- Coastal Wetland Invertebrate Community Health
- Coastal Wetland Fish Community Health
- Deformities/Eroded Fins/Lesions/Tumours in Coastal Wetland Fish
- Amphibian Diversity and Abundance
- Wetland-Dependent Bird Diversity and Abundance
- Coastal Wetland Area by Type
- Gain in Restored Coastal Wetland Area by Type
- Presence, Abundance and Expansion of Invasive Plants
- Habitat Adjacent to Coastal Wetlands
- Contaminants in Snapping Turtle Eggs
- Sediment Flowing into Coastal Wetlands
- Nitrates and Total Phosphorus into Coastal Wetlands
- Water Level Fluctuations

Currently, work is underway to report on as many of these indicators as possible, as well as those recommended for other core ecosystem components. Two of the indicators – amphibian diversity and abundance and wetland-dependent bird diversity and abundance – rely on the MMP for data and interpretation. The MMP is unique in being the only volunteer-driven monitoring program with a standardized protocol applied across the entire Great Lakes basin.

Patterns in the species composition and numbers of breeding wetland birds may reflect changes in the condition of breeding habitats. When combined with an analysis of habitat characteristics, trends in species abundance and diversity can contribute to an assessment of the ability of Great Lakes coastal wetlands to support birds and other wetland-dependent wildlife. When analyzed at various spatial scales, MMP data can help assess the status of marsh birds, amphibians and their habitats across regions, individual lake basins or over the entire Great Lakes basin. Similar analyses on the status and trends of amphibian occurrence can improve assessments of basin-wide wetland health. The use of these indicators will be summarized in a presentation at the SOLEC 2000 meeting.

SOLEC 1998 also focused on Biodiversity Investment Areas (BIAs), coastal regions that contain clusters of exceptional biodiversity. BIAs are intended to foster both basin-wide and local recognition of the rich biological diversity of the Great Lakes ecosystem and to help conserve the many kinds of habitat needed to support this diversity. For SOLEC 1998, the Nearshore Terrestrial BIAs (first discussed at SOLEC 1996) were further refined, and the BIA concept was expanded to include coastal wetlands and open water areas of the lake. Further refinements are planned for SOLEC 2000.

What is restoration?

Current U.S. federal initiatives call for a wide range of restoration action and include achieving a net increase of 40,500 hectares (100,000 acres) of wetlands each year (U.S. EPA, 2000). The Federal Geographic Data Committee Wetlands Subcommittee (composed of several federal agencies) developed a definition for the term 'restoration' so that accurate reporting of wetland increases due to their program activities would be possible. The Wetlands Subcommittee defined restoration as the manipulation of the physical, chemical or biological characteristics of a site with the goal of returning natural/historic functions to former or degraded wetlands. Restoration is divided into two components: re-establishment – returning natural/historic functions to a former wetland (results in a gain of wetland area), and rehabilitation – repairing natural/historic functions of degraded wetlands (results in a gain of wetland function, but not a gain in wetland area). This definition for restoration provides a standard terminology for the more than 15 U.S. agencies involved in wetland restoration, related activities and/or mitigation.

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[I] Please see 'Internet Resources' section for list of selected websites.